

# HOW TO USE BIC ARTICLE CLASSFILE AND REMARKS

by

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## Abstract

This document provides the usage of BIC article class file (`bic-art.cls` version 0.5a) for authors to write articles for *Bulletin of Informatics and Cybernetics*.  $\LaTeX$ 2e is required.  $\LaTeX$ 2.09 is not supported, however, most of features provided in `bic-art.sty` are retained.

*Key Words and Phrases:*  $\LaTeX$ ,  $\TeX$ , document preparation, desktop publishing, PC-UNIX, Windows, Mathematics, Information science.

## 1. Introduction

The class file `bic-art.cls` is a  $\LaTeX$ 2e document class file to write articles for *Bulletin of Informatics and Cybernetics* (BIC, for short). Authors are supposed to submit articles for BIC in form of  $\LaTeX$  source. Note that `bic-art.cls` requires not  $\LaTeX$ 2.09 but  $\LaTeX$ 2e. For  $\LaTeX$ 2.09 users should utilize old version `bic-art.sty`, however,  $\LaTeX$ 2e is highly recommended. We suppose that  $\LaTeX$ 2e is installed in *TeX Directory Standard* (TDS, for short) and denote `$texmf` for the top directory of TDS.

## 2. Getting the class file

The BIC article class file can be obtained from the URL:

`http://www.i.kyushu-u.ac.jp/bic`

Ftp server is also available:

`ftp://ftp.i.kyushu-u.ac.jp/bic`

Put the class file `bic-art.cls` in the working directory, or `$texmf/tex/latex/base`. Windows users should note that folders below the My document folder is not recommended for the working directory.  $\LaTeX$ 2e may not find the class file.

## 3. Features

Features of `bic-art.cls` are introduced. Most of them are retained from the old version `bic-art.sty`. New and modified features are marked with † and ¶, respectively, stable features are not marked.

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### 3.1. Preamble

A  $\LaTeX$  source file begins with `\documentclass[]{}†` command. For `bic-art.cls` we start a file as the following. With an option *reprint* the cover page for reprint would be output. The class file fixes character size at 10 points and b5 paper size for the purpose of checking the accurate pages of an article. So that if another option such as `b4paper` or `12pt` are specified,  $\LaTeX$ 2e would warn and not output dvi files. To use package the `\usepackage[]{}†` command should be declared. Specially if authors need to include graphics(EPS etc), the *graphicx* package would be convenient. See ?.

```
\documentclass{bic-art}
or
\documentclass[reprint]{bic-art}
\usepackage[dvips,xdvi]{graphicx}
```

The DVI file would have *twoside* pages and be formed in b5 paper. Another Paper sizes are not supported. Use `dvips` command with appropriate options to convert DVI files to ps files. We remark that the old version `bic-art.sty` can be used in  $\LaTeX$ 2e. But some troubles are reported.

In preamble BIC articles requires particularly the following commands, `\bictitle{}†`, `\bicvol{}†`, `\bicno{}†`, `\bicyear{}†` and `\bic*author††` command family.

- `\bictitle{arg}` takes one argument *arg* which is the title of the article changed into upper case characters. With *reprint* option in `\documentclass` command the *arg* would be also used for the title in the cover page.
- `\bicvol{arg}(optional)`, `\bicno{arg}(optional)` and `\bicyear{arg}(optional)` commands set parameters volume, number and the published year of *BIC*, respectively. Each of them takes one argument. If not declared the default value '00' would be set.

The class file `bic-art.cls` provide `\bic*author††` command family as follows. All of command is used for authors' name in cover page, title page and headers. Family names would be shown in SMALL CAPS font and first names would be shorten in headers.

- `\bicauthor[thanks]{firstname}{familyname}†` take *thanks* option to describe institutes, contact address etc. Do not use `\thanks` command, use this option.
- `\bicfirstauthor[thanks]{firstname}{familyname}†` would be used to describe the first author of the article in case that there are more than two authors. The commands `\bicsecondauthor[]{}{}†...` `\bicfifthauthor[]{}{}†` are provided for the rest of authors. In case of more than six authors, please get in touch with editor.

Remark that for the *thanks* option there is a restriction of  $\LaTeX$  that some  $\LaTeX$  command are not effective.

NOTE 3.1. The settings in preamble have an effect to the document only if the `\maketitle` command is called in the document environment. □

### 3.2. Start document

For the inside of document environment, `\bickeyword{}`<sup>†</sup> command, customized abstract environment and customized *theorem* environment family are provided.

- `\bickeyword{keywords}`<sup>†</sup>(optional) command outputs keywords and phrases in the abstract which are specified in the argument `keywords`. Note that this command should be declared before abstract environment in the following.
- abstract environment is a customized abstract environment which shows keywords and phrases only if `\bickeyword{}`<sup>†</sup> command is declared in advance.

*Theorem* environment family consists of *theorem*, *proposition*, *lemma*, *collorary*, *definition*, *axiom* and *note*. Theorem number are unified for each section except *proof* and *remark* which have no numbers. It is possible to define new environment with `\definethm` command.

- `\definethm[numbering]{name}{headline}` requires three arguments. The argument `name` is the environment name and `headline` would be output for the headline of this environment. The headline is in SMALL CAPS font and the content is in Roman font. Theorem-numbering follows the option `numbering`. See L<sup>A</sup>T<sub>E</sub>X reference (?) for `\newtheorem` command about theorem-numbering. The default of option `numbering` does not output its theorem-number as *proof* and *note* environments.

NOTE 3.2. In case that the statement begins parenthesis in a *theorem* environment, theorem labels may be in bold font. To avoid this, those words with parenthesis should be enclosed by bracket `{}`. For instance,

```
\begin{theorem} (Gauss) % label is in bold font.
% should be
\begin{theorem} {(Gauss)}
```

Next version of class file will resolve the bug. □

For acknowledgement `acknowledgement` environment is provided.

- `acknowledgement` environment shows its centered headline and the acknowledgement in Roman font without indention.

Author may use a square box to show the end of proofs, theorems and statements. Currently `\Box` command is obsolete in L<sup>A</sup>T<sub>E</sub>X2e, however, `bic-art.cls` provide a substitute command `\qed` for square boxes.

- `\qed` outputs a square box □  
which can be used in both text mode and math mode.

## 4. Reference section

For the reference section a modified `thebibliography`<sup>¶</sup> environment is provided with modified commands `\bibitem[]{}{}¶` and `\cite{}¶`. Generally speaking it is necessary to compile L<sup>A</sup>T<sub>E</sub>X2e source file more than twice to output reference section successfully. See ? for more detail.

- `\bibitem[citation]{author}{year}{citestring}`¶ takes four arguments. Note that `citation` is not option but used in `\cite{}` command so that it is required to specify for citation. `citestring` is shown as an author name for reference in the document. It would be efficient if there are plural authors. For instance,

```
\begin{thebibliography}{99}
\bibitem[Knuth]{Knuth,D.}{1970}{Knuth}
  \textit{The \TeX book}, ASCII corporation, Japanese.
\bibitem[GMS]{Goossens,M., Mittelbach,F. and Samarin,A.}%
  {1994}{Goossens et al.} \textit{The \LaTeX companion},
  Addison Wesley, Japanese.
\end{thebibliography}
```

If we cite `\cite{Knuth}` and `\cite{GMS}` then output would be ? and ?.

- `\cite{citation}`¶ command outputs a citation in the form `citestring(year)` and list it up in the reference section.

## 5. Remarks

Some remarks are noted for editing and printing out. We suppose that  $\text{\LaTeX}2\text{e}$  is installed in *TeX Directory Standard* (TDS, for short). We note `$texmf` for the top directory of TDS.

### 5.1. Folders and directories

The class file `bic-art.cls` should be put in the working directory or any directories directly under `$texmf/tex/latex/`. Windows users should note that the folders below My document is not recommended for the working directory.  $\text{\LaTeX}2\text{e}$  may not find the class file.

### 5.2. Including graphics

It is possible to include graphics into articles. It is recommended for authors to may make use of *graphics* package (?) bundled into  $\text{\LaTeX}2\text{e}$ . To do this it is necessary to call it with the `\usepackage` command.

```
\usepackage[dvips,xdvi]{graphicx}
```

There are two kind of style files in *graphics* package. See the enclosed document in ?. For instance, an *Encapsled PostScript* graphic file `fig-1.eps` can be included by the command:

```
\usepackage[dvips,xdvi]{graphicx}    % In preamble
....
\begin{center}
  \includegraphics[scale=0.5]{fig-1.eps}
  \label{fig:1}
\end{center}
```

Another graphics format can be used with this package, however, it is necessary to prepare drivers to deal with them.

### 5.3. Converting to PostScript file with dvipsk

Currently dvips(version 5.78 pl.4c) does not support paper size b5. The config file `$texmf/dvips/config.ps` might be modified.

```
@ B5 182mm 257mm
@+ ! %%DocumentPaperSizes: B5
@+ %%BeginPaperSize: B5
@+ b5
@+ %%EndPaperSize

@ B4 257mm 364mm
@+ ! %%DocumentPaperSizes: B4
@+ %%BeginPaperSize: B4
@+ b4
@+ %%EndPaperSize
```

Add the above lines to the end of `$texmf/dvips/config.ps` file. If authors are familiar with UNIX version of dvips, conversion would be done by the following command.

```
$ dvips -o output.ps -t B5 file.dvi
$ gs output.ps
```

The command `gs` (*GhostScript*) shows the converted *PostScript* documents.

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Prof. Yanagawa, Editor-In-Chief of *BIC*, had been patient and encouraged me for the *BIC* class file for  $\LaTeX$ 2e. I would like to thank Prof. Yanagawa.

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